

U.S. Patent Application Serial No. 09/351,235
Amendment dated October 7, 2003
Reply to Office Action of July 9, 2003

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended): An image reader for optically reading an image on a medium by means of manual operations comprising:

an housing having an image reading surface coming in contact with the medium when reading an image;

a medium detecting unit provided on the image reading surface for detecting the medium;

[[and]]

A1 an image reading unit provided on said housing for reading image information of the medium according to a result of detection by said medium detecting unit, and

a display control unit to display a whole or a portion of an image contracted or enlarged by overlapping other images.

Claim 2 (Original): An image reader according to Claim 1; wherein said medium detecting unit is a mechanical switch for detecting the medium by mechanically contacting the medium.

U.S. Patent Application Serial No. 09/351,235
Amendment dated October 7, 2003
Reply to Office Action of July 9, 2003

Claim 3 (Original): An image reader according to Claim 1; wherein said medium detecting unit is an optical switch for detecting the medium optically.

A **Claim 4 (Original):** An image reader according to Claim 3; wherein said optical switching unit comprises a light emitting unit for emitting light, and a light receiving unit provided near said light emitting unit for detecting the medium according to a quantity of received light.

Claim 5 (Original): An image reader according to Claim 1 comprising:
a roller rotatably provided on the image reading surface of said housing; and
at least one auxiliary roller rotatably provided on the image reading surface of said housing.

Claim 6 (Original): An image reader according to Claim 5: wherein a rotary encoder is provided to the axis of said roller for detecting the rotation thereof.

Claim 7 (Original): An image reader according to Claim 5: wherein the diameter of said auxiliary roller is less than the diameter of said roller.

Claim 8 (Original): An image reader according to Claim 1 comprising:

U.S. Patent Application Serial No. 09/351,235
Amendment dated October 7, 2003
Reply to Office Action of July 9, 2003

a read control unit for recognizing start and end of image reading according to a result of detection by said medium detecting unit and controlling said image reading unit according to a result of recognition.

Claim 9 (Original): An image reader according to Claim 8 comprising:

A1 an interface unit with an auxiliary image reader capable of reading a document having a different reading size connectable thereto; wherein said read control unit processes a result of reading by said auxiliary image reader when said auxiliary image reader is connected to said interface unit.

Claim 10 (Original): An image reader according to Claim 8 comprising:

a power supply unit for intermittently supplying power to said medium detecting unit when the image is not being read according to a result of recognition by said read control unit.

Claim 11 (Original): An image reader according to Claim 1 comprising:

a memory for storing the data corresponding to a plurality of images read by said image reading unit as image data.

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Claim 12 (Currently Amended): ~~An image reader according to Claim 11 comprising:~~

An image reader for optically reading an image on a medium by means of manual operations comprising:

U.S. Patent Application Serial No. 09/351,235
Amendment dated October 7, 2003
Reply to Office Action of July 9, 2003

a housing having an image reading surface coming in contact with the medium when reading
an image;

a medium detecting unit provided on the image reading surface for detecting the medium;

an image reading unit provided on said housing for reading image information of the medium
according to a result of detection by said medium detecting unit;

a memory for storing the data corresponding to a plurality of images read by said image
reading unit as image data; and

a communicating unit working as a communication interface between said memory and an
external device with said external device capable of accessing said memory connectable thereto.

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Claim 13 (Currently Amended): ~~An image reader according to Claim 11 comprising:~~

An image reader for optically reading an image on a medium by means of manual operations
comprising:

a housing having an image reading surface coming in contact with the medium when reading
an image;

a medium detecting unit provided on the image reading surface for detecting the medium;

an image reading unit provided on said housing for reading image information of the medium
according to a result of detection by said medium detecting unit;

a memory for storing the data corresponding to a plurality of images read by said image
reading unit as image data; and

a transmitting unit with an external device connectable thereto for transmitting a result of reading by said image reading unit as image data to said external device.

¹²/₁₄ **Claim 14 (Original):** An image reader according to Claim 1 comprising:

A1 a display unit provided on an operating surface of said housing for displaying an image according to a result of reading by said image reading unit.

¹³/₁₅ **Claim 15 (Original):** An image reader according to Claim ¹²/₁₄; wherein said display unit is provided in a vertical posture with respect to a reading surface of said image reading unit.

¹⁴/₁₆ **Claim 16 (Original):** An image reader according to Claim ¹²/₁₄ comprising:
an angle adjusting unit for freely adjusting an angle of a display surface of said display unit.

¹⁵/₁₇ **Claim 17 (Original):** An image reader according to Claim ¹²/₁₄ comprising:
a protection cover for covering said display unit.

¹⁶/₁₈ **Claim 18 (Original):** An image reader according to Claim ¹²/₁₄ comprising:
an operating section provided near one edge of the operating surface of said housing and used for an inputting operation.

U.S. Patent Application Serial No. 09/351,235
Amendment dated October 7, 2003
Reply to Office Action of July 9, 2003

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Claim 19 (Currently Amended): ~~An image reader according to Claim 14 comprising:~~

An image reader for optically reading an image on a medium by means of manual operations comprising:

a housing having an image reading surface coming in contact with the medium when reading an image;

a medium detecting unit provided on the image reading surface for detecting the medium;

an image reading unit provided on said housing for reading image information of the medium according to a result of detection by said medium detecting unit;

a display unit provided on an operating surface of said housing for displaying an image according to a result of reading by said image reading unit;

a instructing unit for indicating a direction when an image is to be displayed on the display of said display unit; and

a display control unit for controlling the displaying direction of the image on said display unit according to contents of an instruction from said instructing unit.

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Claim 20 (Currently Amended): ~~An image reader according to Claim 14 comprising:~~

An image reader for optically reading an image on a medium by means of manual operations comprising:

a housing having an image reading surface coming in contact with the medium when reading an image;

U.S. Patent Application Serial No. 09/351,235
Amendment dated October 7, 2003
Reply to Office Action of July 9, 2003

a medium detecting unit provided on the image reading surface for detecting the medium;
an image reading unit provided on said housing for reading image information of the medium
according to a result of detection by said medium detecting unit;

a display unit provided on an operating surface of said housing for displaying an image
according to a result of reading by said image reading unit; and

A1
a display control unit for dividing an image displayed by said display unit with a ratio of N:M
(N+M=1) and displaying each of the divided images with a different contraction ratio or enlargement
ratio.

23
Claim 21 (Currently Amended): ~~An image reader according to Claim 14 comprising:~~

An image reader for optically reading an image on a medium by means of manual operations
comprising:

a housing having an image reading surface coming in contact with the medium when reading
an image;

a medium detecting unit provided on the image reading surface for detecting the medium;
an image reading unit provided on said housing for reading image information of the medium
according to a result of detection by said medium detecting unit;

a display unit provided on an operating surface of said housing for displaying an image
according to a result of reading by said image reading unit; and

U.S. Patent Application Serial No. 09/351,235
Amendment dated October 7, 2003
Reply to Office Action of July 9, 2003

a display control unit for displaying a whole or a portion of an image with the same, contracted or enlarged size as compared to the size of the original image displayed by said display unit by overlapping on the other image(s).

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Claim 22 (Original): An image reader according to Claim ¹²14 comprising:

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a display control unit for displaying in an array of a plurality of entire images or a portion of the image with the same, contracted or enlarged size as compared to the original size of the image displayed by said display unit.

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Claim 23 (Original): An image reader according to Claim ¹²14 comprising:

a display control unit for displaying an arbitrary area of a document image with an enlarged or a contracted size as compared to the original size of the image displayed by said display unit.

✓ **Claim 24 (Currently Amended):** ~~An image reader according to Claim 14 comprising:~~

An image reader for optically reading an image on a medium by means of manual operations comprising:

a housing having an image reading surface coming in contact with the medium when reading an image;

a medium detecting unit provided on the image reading surface for detecting the medium;

an image reading unit provided on said housing for reading image information of the medium

U.S. Patent Application Serial No. 09/351,235
Amendment dated October 7, 2003
Reply to Office Action of July 9, 2003

according to a result of detection by said medium detecting unit;

a display unit provided on an operating surface of said housing for displaying an image
according to a result of reading by said image reading unit;

a display control unit for displaying in an array of images displayed by said display unit
which images are rotated or inverted in a plurality of directions;

FI a selecting unit for selecting any one image from the displayed rotated or inverted images;
and

a right posture correcting unit for converting the orientation of the read image according to
the orientation of the image selected by said selecting unit.

✓ **Claim 25 (Currently Amended):** ~~An image reader according to Claim 14 comprising:~~

An image reader for optically reading an image on a medium by means of manual operations
comprising:

a housing having an image reading surface coming in contact with the medium when reading
an image;

a medium detecting unit provided on the image reading surface for detecting the medium;

an image reading unit provided on said housing for reading image information of the medium
according to a result of detection by said medium detecting unit;

a display unit provided on an operating surface of said housing for displaying an image
according to a result of reading by said image reading unit;

U.S. Patent Application Serial No. 09/351,235
Amendment dated October 7, 2003
Reply to Office Action of July 9, 2003

a text portion determining unit for determining a text portion of the image;
a rotation direction detecting unit for detecting a direction of rotation of an image from a character image for the text portion determined by said text portion determining unit; and
a display control unit for displaying the image as a properly oriented image on the display of said display unit according to a result of detection by said rotation direction detecting unit.

Claim 26 (Currently Amended): ~~An image reader according to Claim 14 comprising:~~

An image reader for optically reading an image on a medium by means of manual operations comprising:

a housing having an image reading surface coming in contact with the medium when reading an image;

a medium detecting unit provided on the image reading surface for detecting the medium;

an image reading unit provided on said housing for reading image information of the medium according to a result of detection by said medium detecting unit;

a display unit provided on an operating surface of said housing for displaying an image according to a result of reading by said image reading unit;

a classifying unit for classifying a plurality of images read by said image reading unit according to prespecified items for classification;

a selecting unit for selecting any of the items for classification; and

a display control unit for displaying the images corresponding to the item for classification

U.S. Patent Application Serial No. 09/351,235
Amendment dated October 7, 2003
Reply to Office Action of July 9, 2003

selected by said selecting unit.

Claim 27 (Currently Amended): ~~An image reader according to Claim 14 comprising:~~

An image reader for optically reading an image on a medium by means of manual operations comprising:

a housing having an image reading surface coming in contact with the medium when reading an image;

a medium detecting unit provided on the image reading surface for detecting the medium;
an image reading unit provided on said housing for reading image information of the medium according to a result of detection by said medium detecting unit;

a display unit provided on an operating surface of said housing for displaying an image according to a result of reading by said image reading unit;

a digitizing unit for digitizing a read image by generating a threshold value for digitizing according to the read image by said image reading unit.

Claim 28 (Currently Amended): ~~An image reader according to Claim 14;~~

An image reader for optically reading an image on a medium by means of manual operations comprising:

a housing having an image reading surface coming in contact with the medium when reading an image;

a medium detecting unit provided on the image reading surface for detecting the medium;
an image reading unit provided on said housing for reading image information of the medium
according to a result of detection by said medium detecting unit;

a display unit provided on an operating surface of said housing for displaying an image
according to a result of reading by said image reading unit;

wherein, when reading an image, an action point of grasping fingers is at a position lower than a center of gravity of said image reader and at the same time a height of the action point is smaller than a width of said housing.

Claim 29 (Withdrawn): An image reader for optically reading an image on a medium by means of manual operations comprising:

a housing having an image reading surface coming in contact with the medium when reading an image;

a displacement detecting unit for detecting a displacement of said housing; and an image reading unit provided on said housing for reading image information of the medium according to a result of detection by said displacement detecting unit.

Claim 30 (Withdrawn): An image reader according to Claim 29; wherein said displacement detecting unit comprises a roller rotatably provided on the image reading surface of said housing, and a displacement computing section for computing a displacement of said

housing from the rotation of said roller.

Claim 31 (Withdrawn): An image reader according to Claim 30 comprising:
first and second auxiliary rollers rotatably provided on the image reading surface of said housing
so that said first and second auxiliary rollers hold said roller therebetween.

Claim 32 (Withdrawn): An image reader according to Claim 30 comprising:
a read control unit for recognizing start and end of image read according to a result of
detection by the displacement detecting unit and controlling said image reading unit according to
a result of recognition.

Claim 33 (Withdrawn): An image reader according to Claim 32 comprising:
an interface unit with various types of auxiliary image reader each having a different
reading size connectable thereto ; wherein said read control unit processes a result of reading by
said auxiliary image reader when said auxiliary image reader is connected to said interface unit.

Claim 34 (Withdrawn): An image reader according to Claim 32 comprising:
a power supply unit for intermittently supplying power to said displacement detecting unit
when an image is not being read according to a result of recognition by said read control unit.

Claim 35 (Withdrawn): An image reader according to Claim 29 comprising:
a memory for storing the data corresponding to a plurality of images read by said image reading unit as image data.

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Claim 36 (Withdrawn): An image reader according to Claim 32 comprising:
a communicating unit working as a communication interface between said memory and an external device with said external device capable of accessing said memory connectable thereto.

Claim 37 (Withdrawn): An image reader according to Claim 31 comprising:
a transmitting unit with an external device connectable thereto for transmitting a result of reading by said image reading unit as image data to said external device.

Claim 38 (Withdrawn): An image reader according to Claim 29 comprising:
a display unit provided on an operating surface of said housing for displaying an image according to a result of reading by said image reading unit.

Claim 39 (Withdrawn): An image reader according to Claim 38; wherein said display unit is provided in a vertical posture with respect to a reading surface of said image reading unit.

Claim 40 (Withdrawn): An image reader according to Claim 38 comprising:
an angle adjusting unit for freely adjusting an angle of a display surface of said display unit.

Claim 41 (Withdrawn): An image reader according to Claim 38 comprising:
a protection cover for covering said display unit.

A1 **Claim 42 (Withdrawn):** An image reader according Claim 38 comprising:
an operating section provided near one edge of the operating surface of said housing and used for an inputting operation.

Claim 43 (Withdrawn): An image reader according to Claim 38 comprising:
a instructing unit for indicating a direction when an image is to be displayed on the display of said display unit; and
a display control unit for controlling the displaying direction of the image on said display unit according to contents of an instruction from said instructing unit.

Claim 44 (Withdrawn): An image reader according to Claim 38 comprising:
a display control unit for dividing an image displayed by said display unit with a ratio of N:M ($N+M=1$) and displaying each of the divided images with a different contraction ratio or

enlargement ratio.

Claim 45 (Withdrawn): An image reader according to Claim 38 comprising:
a display control unit for displaying a whole or a portion of an image with the same, contracted or enlarged size as compared to the size of the original image displayed by said display unit by overlapping on the other image(s).

Claim 46 (Withdrawn): An image reader according to Claim 38 comprising:
a display control unit for displaying in an array of a plurality of entire images or a portion of the image with the same, contracted or enlarged size as compared to the original size of the image displayed by said display unit.

Claim 47 (Withdrawn): An image reader according to Claim 38 comprising:
a display control unit for displaying an arbitrary area of a document image with an enlarged or a contracted size as compared to the original size of the image displayed by said display unit.

Claim 48 (Withdrawn): An image reader according to Claim 38 comprising:
a display control unit for displaying in an array of images displayed by said display unit which images are rotated or inverted in a plurality of directions;

a selecting unit for selecting any one image from the displayed rotated or inverted images;
and
a right posture correcting unit for converting the orientation of the read image according to the orientation of the image selected by said selecting unit.

Claim 49 (Withdrawn): An image reader according to Claim 38 comprising:
a text portion determining unit for determining a text
portion of the image;
a rotation direction detecting unit for detecting a direction of rotation of an image from a
character image for the text portion determined by said text portion determining unit; and
a display control unit for displaying the image as a properly oriented image on the display
of said display unit according to a result of detection by said rotation direction detecting unit.

Claim 50 (Withdrawn): An image reader according to Claim 38 comprising:
a classifying unit for classifying a plurality of images read by said image reading unit
according to prespecified items for classification;
a selecting unit for selecting any of the items for classification; and
a display control unit for displaying the images corresponding to the item for
classification selected by said selecting unit.

Claim 51 (Withdrawn): An image reader according to Claim 29 comprising:
a digitizing unit for digitizing a result of reading by generating a threshold value for digitizing according to a result of reading by said image reading unit.

Claim 52 (Withdrawn): An image reader according to Claim 29; wherein, when reading an image, an action point of grasping fingers is at a position lower than a center of gravity of said image reader and at the same time a height of the action point is smaller than a width of said housing.

Claim 53 (Withdrawn): An image reader for optically reading an image on a medium by means of manual operations comprising:
a housing having an image reading surface coming in contact with the medium when reading an image;
a medium detecting unit provided on the image reading surface for detecting the medium;
a displacement detecting unit for detecting a displacement of said housing; and
an image reading unit provided on said housing for reading image information of the medium according to both a result of detection by said medium detecting unit and a result of detection by said displacement detecting unit.

Claim 54 (Withdrawn): An image reader according to Claim 53; wherein said medium

U.S. Patent Application Serial No. 09/351,235
Amendment dated October 7, 2003
Reply to Office Action of July 9, 2003

detecting unit is a mechanical switch for detecting the medium by mechanically contacting the medium.

Claim 55 (Withdrawn): An image reader according to Claim 53; wherein said medium detecting unit is an optical switch for detecting the medium optically.

A1 **Claim 56 (Withdrawn):** An image reader according to Claim 55; wherein said optical switch comprises a light emitting unit for emitting light, and a light receiving unit provided near said light emitting unit for detecting the medium according to a quantity of the received light.

Claim 57 (Withdrawn): An image reader according to Claim 53; wherein said displacement detecting unit comprises a roller rotatably provided on the image reading surface of said housing, and a displacement computing section for computing a displacement of said housing from the rotation of said roller.

Claim 58 (Withdrawn): An image reader according to Claim 57 comprising:
first and second auxiliary rollers rotatably provided on the image reading surface of said housing so that said first and second auxiliary rollers hold said roller therebetween.

Claim 59 (Withdrawn): An image reader according to Claim 53 comprising:

a read control unit for recognizing start and end of reading of an image according to both a result of detection by said medium detecting unit and a result of detection by said displacement detecting unit and controlling said image reading unit according to the result of recognition.

Claim 60 (Withdrawn): An image reader according to Claim 59 comprising:

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an interface unit with various types of auxiliary image readers each having a different reading size connectable thereto; wherein said image control unit processes a result of reading by said auxiliary image reader when said auxiliary image reader is connected to said interface unit.

Claim 61 (Withdrawn): An image reader according to Claim 59 comprising:

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a power supply unit for intermittently supplying power to said medium detecting unit as well as to said displacement detecting unit when an image is not being read.

Claim 62 (Withdrawn): An image reader according to Claim 53 comprising:

a memory for storing the data corresponding to a plurality of images read by said image reading unit as image data.

Claim 63 (Withdrawn): An image reader according to Claim 62 comprising:

a communicating unit working as a communication interface between said memory and

U.S. Patent Application Serial No. 09/351,235
Amendment dated October 7, 2003
Reply to Office Action of July 9, 2003

an external device with said external device capable of accessing said memory connectable thereto.

Claim 64 (Withdrawn): An image reader according to Claim 62 comprising:
a transmitting unit with an external device connectable thereto for transmitting a result of reading by said image reading unit as image data to said external device.

Claim 65 (Withdrawn): An image reader according to Claim 53 comprising:
a display unit provided on an operating surface of said housing for displaying an image according to a result of reading by said image reading unit.

Claim 66 (Withdrawn): An image reader according to Claim 65; wherein said display unit is provided in a vertical posture with respect to a reading surface of said image reading unit.

Claim 67 (Withdrawn): An image reader according to Claim 65 comprising:
an angle adjusting unit for freely adjusting an angle of a display surface of said display unit.

Claim 68 (Withdrawn): An image reader according to Claim 65 comprising:
a protection cover for covering said display unit.

Claim 69 (Withdrawn): An image reader according to Claim 65 comprising:
an operating section provided near one edge of the operating surface of said housing and
used for an inputting operation.

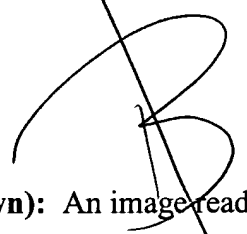
Claim 70 (Withdrawn): An image reader according to Claim 65 comprising:
a instructing unit for indicating a direction when an image is to be displayed on the
display of said display unit; and
a display control unit for controlling the displaying direction of the image on said display
unit according to contents of an instruction from said instructing unit.

Claim 71 (Withdrawn): An image reader according to Claim 65 comprising:
a display control unit for dividing an image displayed by said display unit with a ratio of
 $N:M$ ($N+M=1$) and displaying each of the divided images with a different contraction ratio or
enlargement ratio.

Claim 72 (Withdrawn): An image reader according to Claim 65 comprising:
a display control unit for displaying a whole or a portion of an image with the same,
contracted or enlarged size as compared to the size of the original image displayed by said
display unit by overlapping on the other image(s).

Claim 73 (Withdrawn): An image reader according to Claim 65 comprising:
a display control unit for displaying in an array of a plurality of entire images or a portion of the image with the same, contracted or enlarged size as compared to the original size of the image displayed by said display unit.

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Claim 74 (Withdrawn): An image reader according to Claim 65 comprising:
a display control unit for displaying an arbitrary area of a document image with an enlarged or a contracted size as compared to the original size of the image displayed by said display unit.


Claim 75 (Withdrawn): An image reader according to Claim 65 comprising:
a display control unit for displaying in an array of images displayed by said display unit which images are rotated or inverted in a plurality of directions;
a selecting unit for selecting any one image from the displayed rotated or inverted images;
and
a right posture correcting unit for converting the orientation of the read image according to the orientation of the image selected by said selecting unit.

Claim 76 (Withdrawn): An image reader according to Claim 65 comprising:

a text portion determining unit for determining a test portion of the image;
a rotation direction detecting unit for detecting a direction of rotation of an image from a character image for the text portion determined by said text portion determining unit; and
a display control unit for displaying the image as a properly oriented image on the display of said display unit according to a result of detection by said rotation direction detecting unit.

Claim 77 (Withdrawn): An image reader according to Claim 65 comprising:

A. a classifying unit for classifying a plurality of images read by said image reading unit according to prespecified items for classification;
a selecting unit for selecting any of the items for classification; and
a display control unit for displaying the images corresponding to the item for classification selected by said selecting unit.

Claim 78 (Withdrawn): An image reader according to Claim 53 comprising:

a digitizing unit for digitizing a result of reading by generating a threshold value for digitizing according to a result of reading by said image reading unit.

Claim 79 (Withdrawn): An image reader according to Claim 53; wherein, when reading an image, an action point of grasping fingers is at a position lower than a center of gravity of said image reader and at the same time a height of the action point is smaller than 10 a width of said

housing.

Claim 80 (Withdrawn): An image reader for optically reading an image on a medium by means of manual operations comprising:

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- a medium detecting unit for detecting the medium;
- an image reading unit for reading an image on the medium;
- a displacement detecting unit for detecting a relative displacement between said image reading unit and the medium; and
- a controller for starting reading of an image on a medium when said medium detecting unit detects the medium as well as said displacement detecting unit detects a relative displacement between said image reading unit and the medium.

Claim 81 (Withdrawn): An image reader for optically reading an image on a medium by means of manual operations comprising:

- a reading unit for optically reading the image according to prespecified conditions for reading;
- a read start detecting unit for detecting start of reading of image on the medium; and
- a read condition deciding unit for deciding the conditions for reading when start of reading of the image is detected by said read start detecting unit.

Claim 82 (Withdrawn): An image reader according to Claim 81; wherein said read start detecting unit detects start of reading of the image by checking whether the medium is present or not.

Claim 83 (Withdrawn): An image reader according to Claim 81; wherein said read start detecting unit detects start of reading of the image by detecting a displacement of the medium.

A. **Claim 84 (Withdrawn):** An image reader according to Claim 81; wherein said read start detecting unit detects start of reading of the image by detecting presence of the medium and a displacement thereof on the medium.

Claim 85 (Withdrawn): An image reader according to Claim 83; wherein said read start detecting unit invalidates a result of detection of start of reading of the image when the displacement is less than a prespecified threshold value.

Claim 86 (Withdrawn): An image reader according to Claim 83; wherein said read start detecting unit invalidates a result of detection of start of reading of the image when the displacement is less than a prespecified threshold value.

Claim 87 (Withdrawn): An image reader according to Claim 84; wherein said read start

detecting unit invalidates a result of detection of start of reading of the image when the displacement detected within a prespecified period of time is less than a prespecified threshold value.

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Claim 88 (Withdrawn): An image reader according to Claim 84; wherein said read start detecting unit invalidates a result of detection of start of reading of the image when the displacement detected within a prespecified period of time is less than a prespecified threshold value.

Claim 89 (Withdrawn): An image reader for optically reading an image on a medium by means of manual operations comprising:

a read instructing unit for instructing start and end of reading of the image;

an image reading unit for reading the image; an image memory for storing a plurality of image data; and a read control unit for making said image reading unit start 25 reading of an image and also making said image memory store the image data therein.

Claim 90 (Withdrawn): An image reader according to Claim 89; wherein said image memory stores the image data read by said image reading unit and reads the stored image data concurrently.

U.S. Patent Application Serial No. 09/351,235
Amendment dated October 7, 2003
Reply to Office Action of July 9, 2003

Claim 91 (Withdrawn): An image reader according to Claim 89; wherein said read control unit restores control for enabling acceptance of an instruction for start of a next operation for reading immediately after an instruction for end of reading is received from said read instructing unit.

Claim 92 (Withdrawn): An image reader according to Claim 89; wherein said read instructing unit instructs start and end of reading according to detection of the medium.

²⁹
Claim 93 (Currently Amended): An image reader for optically reading an image on a medium by means of manual operations comprising:

A₁ a housing having an image reading unit coming in contact with the medium when reading an image;

a medium detecting unit provided on an image reading surface of said housing for detecting the medium;

a control processing unit for providing controls over said medium detecting unit so that detection of the medium can normally be performed according to environments and conditions for reading an image and processing a result of detection by said image detecting unit; [[and]]

an image reading unit for reading image information of the medium according to the result of detection processed by said control processing unit, and

U.S. Patent Application Serial No. 09/351,235
Amendment dated October 7, 2003
Reply to Office Action of July 9, 2003

a display control unit to display a whole or a portion of an image contracted or enlarged by overlapping other images.

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³⁴
Claim 9~~4~~ (Original): An image reader according to Claim 9~~3~~²⁹; wherein said medium detecting unit comprises a light emitting element and a light receiving element each for optically detecting the medium, and said control processing unit decides whether said medium detecting unit is to be used or not according to environment and conditions for reading an image.

³⁰
Claim 9~~5~~ (Currently Amended): An image reader according to Claim 9~~3~~²⁹[[;]], wherein said medium detecting unit comprises a light emitting element and a light receiving element each for optically detecting the medium, and said control processing unit controls power supply to said light emitting element according to terms and conditions for reading an image.

³¹
Claim 9~~6~~ (Original): An image reader according to Claim 9~~3~~²⁹; wherein said medium detecting unit comprises a light emitting element and a light receiving element each for optically detecting the medium, and said control processing unit provides pulse drive control for said light emitting element.

³⁵
Claim 9~~7~~ (Original): An image reader according to Claim 9~~4~~³⁴; wherein there are provided a plurality of said medium detecting units, said control processing unit determines that the medium has

U.S. Patent Application Serial No. 09/351,235
Amendment dated October 7, 2003
Reply to Office Action of July 9, 2003

been detected when any one of said plurality of medium detecting units detects the medium, and said image reading unit reads image information of the medium according to a result of detection by said control processing unit.

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³⁴
Claim 98³⁴ (Original): An image reader according to Claim 94³⁴; wherein there are provided a plurality of said image detecting units and said image reader comprises a changing unit for freely changing a method of using a result of detection by said plurality of medium detecting units in said control processing unit.

³⁷
Claim 99²⁹ (Original): An image reader according to Claim 94²⁹; wherein said medium detecting unit consists of a photoelectric switch for detecting the medium optically or a mechanical switch for detecting the medium mechanically.

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Claim 100³⁷ (Original): An image reader according to Claim 99³⁷; wherein said control processing unit determines that the medium has been detected when any one of said photoelectric switch or said mechanical switch detects the medium.

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Claim 101⁴¹ (Currently Amended): ~~An image reader according to Claim 99 comprising:~~
An image reader for optically reading an image on a medium by means of manual operations
comprising:

U.S. Patent Application Serial No. 09/351,235
Amendment dated October 7, 2003
Reply to Office Action of July 9, 2003

a housing having an image reading unit coming in contact with the medium when reading an image;

a medium detecting unit provided on an image reading surface of said housing for detecting the medium;

a control processing unit for providing controls over said medium detecting unit so that detection of the medium can normally be performed according to environments and conditions for reading an image and processing a result of detection by said image detecting unit;

an image reading unit for reading image information of the medium according to the result of detection processed by said control processing unit; and

a priority deciding unit for deciding and giving preference to any one of the result of detection by said photoelectric switch or said mechanical switch in order to execute the control processing in said control processing unit,

wherein said medium detecting unit consists of a photoelectric switch for detecting the medium optically or a mechanical switch for detecting the medium mechanically.

³²
Claim 10² (Original): An image reader according to Claim ²⁹9³; wherein said medium detecting unit detects the medium optically and a wall is provided around said medium detecting unit.

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Amendment dated October 7, 2003
Reply to Office Action of July 9, 2003

³⁹
Claim 103 (Original): An image reader according to Claim ²⁹9~~8~~; wherein said medium detecting unit consists of a plurality of mechanical switches each for discretely detecting the medium mechanically, said control processing unit determines that the medium has been detected when any one of said plurality of mechanical switches detects the medium, and said image reading unit reads image information of the medium according to a result of detection by said control processing unit.

⁴⁰
Claim 104 (Original): An image reader according to Claim ³⁹103~~3~~ comprising:
a changing unit for freely changing a control method in said control processing unit by using a result of detection in each of said plurality of mechanical switches.

³³
Claim 105 (Original): An image reader according to Claim ²⁹9~~8~~; wherein said medium detecting unit comprises:

a moving member including a main roller rotating on the medium when reading an image and capable of freely moving in said housing; and

a movement detecting unit for detecting movement of said moving member.